

### **REMARKS**

Claims 1-4, 6-13, 15 and 17-24 are pending in the application.

Claims 5, 14, and 16 have been canceled.

Claims 1, 19, 23, and 24 have been amended.

Claims 1-4, 6-13, 15, 17, 19, 20 and 22-24 are rejected.

Claims 18 and 21 are objected to.

### **PTO Claim Rejection**

Claims 1-3, 6, 7, 13, 15, 17, 19-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szeliski et al. (US Patent # 6,097,854) in view of Toyoda et al. (US Patent # 5,461,440).

### **Response to PTO Rejection**

This rejection is traversed.

Claim 1 states:

1 (currently amended). A method for producing a composite digital image, comprising the steps of:

providing a plurality of partially overlapping source digital images having pixel values that are linearly or logarithmically related to scene intensity, said source digital images having overlap regions wherein pixels of said source digital images correspond in scene content, said source digital images differing in scene content outside said overlap regions;

determining the focal length of the source digital images from one or more sets of corresponding pixel values of the source digital images in said overlap regions;

computing from the determined focal length, a radial exposure transform to compensate for exposure fall off as a function of the distance of a pixel from the center of the digital image;

modifying the source digital images by applying the radial exposure transform to one or more of the source digital images to produce adjusted source digital images; and

combining the adjusted source digital images to form a composite digital image by blending said overlap regions;

wherein said method is carried out without warping any of said source digital images.

The rejection states that Szeliski disclose all of the elements of Claim 1 except the focal length determining step. As amended, the method of claim 1 states that the method is carried out without warping any of the source digital

images combined into the composite digital image. Szelinski is clearly inapplicable to rendering claim 1 obvious since it relies heavily on using warping during the carrying out of the disclosed method.

“The system of the invention aligns a set of plural overlapping images useful in constructing a mosaic by performing patch-based alignment of the set of overlapping images to produce a set of warped images, performing block adjustments of the set of warped images to produce a set of block-adjusted images, and then performing pair-wise motion-based local warping of the set of block-adjusted images.”

(Emphasis added) (Szeliski, ABSTRACT)

“A matrix multiplier 1220 transforms the current image coordinates with which a warp transform matrix to new coordinates with which a *warp* operator 1225 resamples the second image to produce a warped image(step 1160).” (Emphasis added) (Szeliski, col. 15, lines 24-28).

“Accordingly, the term “warp” as employed in this specification refers generally to any process employing a transformation M to produce the desired effect, whether the transformation is a planar perspective transformation or a three-dimensional rotation transformation.” (Emphasis added) (Szeliski, col. 15, lines 64)

The invention of claim 1 is clearly advantageous over Szeliski since multiple warping steps are not used, saving time, expense and computational power.

The examiner admits that Szeliski fails to disclose the steps of the method of claim 1 of determining the focal length of the source digital images from the source image and computing from the determined focal length a radial exposure transform. Toyoda is cited to fill in this failure of the disclosure of Szeliski. This assertion is challenged. Toyoda does not use source digital images in determining focal length. In Toyoda, focal length is determined during capture of film images as follows:

“Lens information (focal length, focal position, and aperture value) in a photographic operation is determined by the CPU 102 (step S7). The lens information is converted into marginal attenuation data by using

data in the ROM 105 incorporated in the lens (step S8)." (Toyoda, col. 10, lines 17-23; Figs. 11-13).

In Toyoda, at the time that focal length is determined and the lens information including the focal length is converted into marginal attenuation data, source digital images do not exist. Captured images are on film, which later is scanned. (See: Toyoda, Fig. 11 and col. 10, lines 24-32).

Clearly, Szeliski either alone or in combination with Toyoda does not make obvious the invention of claim 1. Claim 1 should therefore be allowed.

Claims 2-3, 6, 7, 13, 15, 17, 19-20, and 22-24 are also allowable for the reasons claim 1 is allowable, and should be allowed.

#### **PTO Rejection**

Claims 4 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szeliski et al. (US Patent # 6,097,854) in view of Toyoda et al. (US Patent # 5,461,440) and "Reference Input/Output Medium Metric RGB Color Encodings".

#### **Response To PTO Rejection**

Claims 4, 8-10, 11, and 12 have been variously rejected on Szeliski and Toyoda, in combination with Reference, Inoue, or Hirai. These rejections are traversed. The arguments presented above regarding the inapplicability of Szeliski and Toyoda are equally applicable to these rejections and will not be repeated. The other cited art adds nothing to the basic reference combination to render these claims obvious. Claims 4, 8-10, 11, and 12 are therefore deemed to be allowable for the same reasons that claim 1 and the other rejected claims are deemed allowable. Reconsideration and allowance of these claims is therefore requested.

#### **PTO Office Action - Allowable Subject Matter**

The Office Action stated:

"Claims 18 and 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims."

#### **Response to Office Action**

The Examiner's attention is drawn to the fact that claims 18 and 21 were presented as rewritten in independent form in the Amendment mailed March 27, 2006 which was in response to the Office Action mailed December 29, 2005.

Independent claims 18 and 21 are also presented in this amendment as previously presented claims. Claims 18 and 21 are allowable and allowance is requested.

**Conclusion**

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,



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